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ABSTRACT

A study examined the relationships between the media, public opinion and the Medicare Catastrophic Act of 1988 which was repealed in 1989. Using the NEXIS electronic database, 11 years (1977-89) of news articles, opinion pieces, editorials, and letters to the editor were harvested in random sequence from the Associated Press news wire, the "Los Angeles Times," the "New York Times," and the "Washington Post." Results confirmed earlier studies showing that time trends of opinion--in this case that of senior citizens over 65 years of age--could be forecast from mass media stories. The findings are consistent with the model that legislation occurs in an opinion climate shaped by the media. For catastrophic health, the time needed to craft compromise legislation in response to objections to the original bill was cut short by the impending deadline for payments by the elderly beginning January 1990. Therefore, outright repeal rather than modification was the result. In addition to being a key conduit for passing information and pressures to the public and lawmakers, the media could also serve as a meter for indicating the impact of important messages passed through other channels such as direct mailings. Future research needs to focus on the extent to which the press is also able to convey and gage the major influences in lawmakers. (Twelve figures and 1 table are included; 30 references are attached.) (Author/PRA)

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The Media and the Fate of the Medicare Catastrophic Extension Act

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Abstract

This paper examines the Medicare Catastrophic Extension Act of 1988 which was repealed in 1989. A broad range of messages on this controversial legislation was found in the press. This study confirms earlier studies showing that time trends of opinion -- in this case that of senior citizens over 65 years of age -- could be forecast from mass media stories. Our findings are consistent with the model that legislation occurs in an opinion climate shaped by the media. For catastrophic health, the time needed to craft compromise legislation in response to objections to the original bill was cut short by the impending deadline for payments by the elderly beginning January 1990. Therefore, outright repeal rather than modification was the result. In addition to being a key conduit for passing information and pressures to the public and lawmakers, the media could also serve as a meter for indicting the impact of important messages passed through other channels such as direct mailings.

Introduction

The Medicare Catastrophic Extension Act was unusual in being a major bill which was passed in one year and repealed the next. Although the concept had already been discussed sporadically by Democrats including Senator Edward Kennedy and President Carter's administration in the 1970s (e.g. Putzel, 1978; Craft, 1979), serious legislative efforts began just before President Ronald Reagan's February 4, 1986 State of the Union address. He proposed to extend Medicare to protect the elderly from the devastating costs of prolonged medical care. Among senior citizens' lobbies were the 30 million member American Association of Retired Persons (AARP) which supported the program and the 5 million member National Committee to Preserve Medicare and Social Security headed by ex-representative James Roosevelt of California which opposed it in favor of a long-term home-care bill.

Given fears about costs, the final bipartisan bill did not supply nursing home care but did provide indefinite coverage of hospitalization costs. In the past, Medicare hospital payments had decreased after 60 days and ended entirely after 90. Furthermore, prescription drug payments were to be covered above an initial $550.

Consistent with Medicare, funding was modeled on insurance with premiums being the word of choice. Reagan insisted that the benefits be self-financed (Bocchino, 1989) and proposed that the elderly who benefitted should contribute regardless of their financial status (Iglehart, 1989). Congress made the modification that payment would be progressive, based on income tax liability. Part of the premiums was to come from a decrease in social security payments of $4 per month with that figure to rise in future years. In addition, an elderly person paying more than $150 in income taxes was assessed a surtax of 15 percent up to a maximum of $800.

With the prospect of eliminating the financial burden of catastrophic illnesses and the

absence of serious objections, the bill passed in June 1988 with overwhelming approval in both the House (328 to 72) and the Senate (86 to 11).

However, the Roosevelt organization sent numerous direct mailings to incite its members to oppose the bill. One mailing had the headline "Your Federal Taxes for 1989 May Increase by Up to $1600 ($800 for Singles) -- Just Because You Are Over the Age of 65" (Hosenball, 1989). This lobbying found a receptive audience, especially among the wealthier elderly. These senior citizens were most likely to be among the 75 percent who already had some coverage through private "medigap" insurance or through retirement programs with their previous employers. Furthermore, the wealthiest with the highest payment liabilities were those likely to have the best coverage. A third of the remaining 25 percent were already protected by the Medicaid program for the poor (Economist, 1989). Therefore, many seniors were irate about paying large sums for what they perceived to be an unneeded benefit. The situation was not helped by a Congressional Budget Office estimate that the average beneficiary would pay $145 for what the market could supply for $62 (Tolchin, 1989).

The higher income elderly became progressively more opposed according to several polls commissioned by the AARP (Straw, 1990). In general, the AARP polls found "consistent support for the benefits," but surveys between May 1988 and August 1989 found increasing antagonism to the plan "that required Medicare enrollees to pay for the entire program" (Straw, 1990).

To counter this trend, the AARP, a number of other lobby groups, and politicians from both parties tried unsuccessfully to convince their constituents that the benefits outweighed the costs. For example, one legislator expressed hope that "explaining the law and distributing information [would] dispel unnecessary fears" and that "as various parts of the bill become effective, people will begin to see its real benefits" (Bocchino, 1989).

Attempts were made to revise the plan were stymied by the approaching end of Congressional session and the impending implementation of the surtax at the end of 1989. Without a compromise solution, the bill was repealed by the House on October 4, 1989, and by the Senate on November 22.

Methods

This paper explores the relationships between the media, opinion and catastrophic health legislation. Therefore, the first step was to analyze a representative sample of the media coverage of this topic. Since both the written and electronic press try to cover important news, significant developments on television are also likely to be reported by newspapers and magazines. In support of this proposition, we found that the written press alone could be used for making accurate calculations of opinion time trends (Fan, 1988; Fan and McAvoy, 1989; Fan and Tims, 1989). We used the written press for this project as well given the availability of the full texts of many wire service and newspaper stories on electronic databases. Besides news articles, editorials, opinion pieces, and letters to the editor were also studied.

Using the NEXIS electronic database, relevant texts were harvested in random sequence from the Associated Press (AP) news wire and three major newspapers, the Los Angeles Times, the New York Times, and the Washington Post. The full texts of AP stories entered the NEXIS database at the earliest date, so it was possible to follow news coverage on catastrophic health in this wire service from the beginning of 1977 to December 1, 1989 just after both houses of Congress had repealed the law. There were about two years between 1983 and 1985 with no AP news on the issue, followed by consistent interest until the end of the retrieval period. Therefore, other news sources which became archived in the NEXIS database later than 1977 were retrieved after 1985, by which time the texts of all three newspapers were also online.

To retrieve relevant stories, we instructed the database to send our local computer all text

within a fifty-word range of the phrases "catastrophic health" or "catastrophic medical." This fifty-word limit has typically been sufficient to locate all pertinent text. The phrases were used in three separate searches to locate a total of 1314 non-duplicated items. Text was retrieved from all news stories identified by this search phrase. Next to the AP, the Washington Post carried the most coverage.

Our first retrieval and analysis was of the AP alone from January 1, 1977, to November 8, 1989. This search located 539 stories containing over 680,000 characters of text. The next retrieval was from the Los Angeles Times, New York Times, and Washington Post between January 1, 1985, and November 8, 1989. It found an additional 732 stories with over 830,000 characters of text. The final retrieval included all four sources from November 6, 1989, to December 1, 1989 and netted 56 stories, about 76,000 characters. The duplicate stories retrieved during the overlapping time between November 6 to 8 were discarded. The total text amounted to approximately 1.6 million characters. The analyses were run on the texts of all three retrievals and the scores were merged.

The computer method used for the content analysis of the retrieved material has been described in previous studies by Fan (1988), Fan and McAvoy (1989), and Fan and Tims (1989). The first step was to "filter" the retrieved text so that it focused on the topic of catastrophic health. This was accomplished by keeping only those paragraphs containing the root string of letters "catastroph" together with at least one word such as "act," "bill," "program," etc. referring to legislation. This resulted in the retention of approximately 930,000 characters of text, about 59 percent of those initially retrieved. This more pertinent text was then scored for its support of or opposition to the program.

Both the initial filtration and subsequent scoring steps were executed according to computer instructions written specifically for this analysis. The instructions were divided into

two parts: (1) a dictionary containing words grouped into concept categories, and (2) a set of word-relationship rules. Two of the concept categories were ProWord and ConWord which referred, respectively, to words with favorable and unfavorable connotations. Words in the ProWord class included "favor" and "approve" while those in the ConWord group included "repeal" and "reject." In one set of scoring rules, for instance, a ProWord or a ConWord close to a cluster of words referring to "catastrophic health insurance" would lead the paragraph to be scored as, respectively, pro or con. These word combinations were further modified by other nearby words such that negation words (e.g. "not" or "reject") could change the sense of pro to con and vice versa. Furthermore, some words which had no clear favorable or unfavorable connotations by themselves could be combined to give connotations of pro and con. An example would be "expand"..."drug program" which referred to better medication in the context of catastrophic health and was typically favorable to the bill.

The dictionaries and rules were written for the computer filtration and scoring steps by a human analyst who read a random portion of the retrieved text, categorized the key words, and wrote the rules describing their associations. The dictionary and rules were then applied to a random selection of the retrieved text and were modified as necessary to score the text as accurately as possible. The computer scoring was performed using instructions which led to the computer and human scoring to be in agreement for 84 percent of 268 random paragraphs. The use of paragraphs rather than the entire story as the unit of analysis has the advantage of giving a long story taking a strong stand an appropriately greater weight than a short story with only cursory mention of the topic. An example of a favorable paragraph was:

> The catastrophic health bill gave the Republicans an opportunity to show that they cared about older people. "The White House found a way to appear responsive to the needs of the elderly," said Representative Tom Foley, Democrat of Washington, the

Majority Leader. "It was good politics, as well as good, substantive legislation." (Tolchin, 1988)

An unfavorable paragraph was:

Senate Minority Leader Robert J. Dole (R-Kan.) proposed -- and Democrats said they will agree today -- to include in the debt limit bill two politically popular provisions that are part of the deficit-reduction measure. One would repeal or revise the controversial catastrophic health insurance program and the other would repeal Section 89 of the tax code, which prohibits discrimination in employee benefit plans. (Kenworthy and Dewar, 1989)

The total numerical value for each paragraph was 1.0 with those containing information supporting more than one view (e.g., both pro and con) receiving fractional scores adding to 1.0. Paragraphs promoting no position received no score. Each story was given a set of scores equal to the sums of all the component paragraph scores, and the scores were sorted chronologically by the date of the story.

All scores favoring catastrophic health were used to compute a mathematical persuasive force function favoring the bill while opposing scores were combined to give a persuasive force function in the other direction. In the computations, every score was assumed to have its highest persuasive power on the date of the story. This force then was modeled to drop exponentially with a one-day half-life (Fan, 1988). The persuasive force functions due to the individual paragraphs were added together to give the overall persuasive force functions in the pro and con directions with computations made every 24 hours. Plotted on the compressed time scale of Fig. 1, each spike is an instantaneous rise followed by a drop with the one-day half-life.

The date and story scores were inserted into the mathematical model of ideodynamics (Fan, 1988) to explore the relationship between persuasive messages and their impact on affected

populations. The model assumes that persuasive force functions such as those in Fig. 1 are the forces which drive opinion changes. Ideodynamics claims that some fraction of a group will be influenced to change their minds by new information opposing their current stance. In contrast, supportive information should reinforce opinion but not change it.

The model further postulates that the extent of change is proportional to the amount of opposing information received and, simultaneously, to the number of people whose minds can be altered. Obviously, if everyone already supports a viewpoint, no amount of additionally favorable information should cause any change. On the other hand, even a small amount of opposing information could cause a perceptible shift for a large population of opponents. Given these considerations, for the case of catastrophic health,

(Eq. 1) $dB/dt = k'_2(1-B)G_F - k'_2BG_U$

where B = proportion of the population favorable to catastrophic health insurance when the undecideds are removed and the pro and con percentages are renormalized to 100 percent,

(1-B) = remaining fraction of the population who are unfavorable to the plan after the renormalization,

G_F = persuasive force favorable to catastrophic health insurance (e.g. Fig. 1, top frame),

G_U = persuasive force unfavorable to catastrophic health insurance (e.g. Fig. 1, bottom frame), and

k'_2 = "persuasibility constant" corresponding to the amount of opinion change for a given amount of information acting on a subpopulation of opposing individuals susceptible to persuasion.

Since the undecideds are removed, the proportion of opponents to the catastrophic health

insurance plan is fraction B subtracted from 1.0. The products of the B and G terms make the differential equation non-linear in the independent variables and hence different from time trend models with constant multipliers for these variables.

The one unknown parameter in the ideodynamic equations is the persuasibility constant k'2 reflecting the ease with which minds are changed with a given persuasive force. Higher values correspond to a larger audience for the message, an increased credibility for the source of the message, more attentiveness to the issue and/or lower psychological resistance to change, as would be expected for topics more distant from the core beliefs of individuals. Although some analyses (Fan, 1988) have required that different constants be used for different types of information, the same constant was appropriate for both pro and con information for catastrophic health indicating that both types of information were equally persuasive.

In the usual ideodynamic computation of opinion time trends, opinion is set at the percentage values of an actual poll at the beginning of the calculation. Then opinion is calculated in a forecast mode using equation 1 starting at these poll numbers. New opinion is computed, one day at a time, driven by G functions based on story content scores (e.g. Fig. 1). The B values used on subsequent days are those calculated from the day before. In this way all terms in the equation are known except the k'_2 constant which is estimated by fitting projected opinion to a poll time series. Forecasts which are consistently too high or too low are indications that different k'_2 values are needed for pro and con information. Even with two possible k'_2 values, the model is extremely parsimonious. If the fit to as set of poll is poor, the model must be modified discarded. If the fit is good, then the implication is that the media can represent all the important messages influencing the public.

Unfortunately, for catastrophic health, there were no published opinion polls in 1985 before the debate began in earnest. Nevertheless, there was some discussion of the issue. In

this case, it was possible to estimate opinion, even in the total absence of polls, using the method of Convergence of Worst Cases (CSC) (Fan and McAvoy, 1988). For this method, pairs of opinion calculations from AP stories were begun at an even earlier time with the initial opinion set at either 0 or 100 percent favoring catastrophic health insurance. By January 1, 1985, estimated opinions from both extreme starting points had converged to approximately 85 percent favorable. Since real opinion at the early time must have been somewhere between these two extremes, that value would also have been in the vicinity of 85 percent. Therefore, opinion calculations were made from the beginning of 1985 based on this percentage. The AARP polls from 1987 to 1989 of citizens 65 years and older (Straw, 1990) could then be used to optimize constant k'_2 for that subpopulation based on the later time period.

Besides computing expected opinion based on press stories, other studies in this paper examined the importance of various types of press coverage on the total media discussion. For this purpose, the computer analysis was set in yet another mode where dictionaries and rules were written to locate specific paragraphs discussing chosen topics such as repeal of the legislation. Then the pro and con scores shown in Fig. 1 corresponding to those paragraphs were compiled into separate lists and plotted to show pro and con sentiment associated with different types of press coverage.

Results

The AP did not mention catastrophic health insurance in either a favorable or unfavorable manner during 1977, the first year of the study (Fig. 1). After occasional and sporadic coverage between 1978 and 1983, usually in a favorable context, there was the two year lull discussed above. Interest revived in 1986 after Reagan moved the issue to a position of prominence, and discussion increased steadily for the remainder of the decade. The AP ran the most stories (562, of which only 50 appeared between 1977 and 1985). The Los Angeles Times and New York

Times both had about 200 items on the topic. The 363 Washington Post articles was more than those in the other papers.

When the news sources were scored separately for pro and con coverage (Figs. 2 and 3), there was strong support prior to the June 1988 passage of the Medicare Catastrophic Coverage Act. Then, although supporting coverage remained high (Fig. 2), opposition grew until it peaked at the time of repeal in November 1989 (Fig. 3). The increased proportion of unfavorable coverage after passage of the bill is also seen in Table 1 where media discussion was divided in time at June 8, 1988 when the Senate approved the bill after its June 3 House passage.

When opinion was calculated from all news sources combined, there was a good fit to the AARP polls of senior citizens (Fig. 4, top frame). The average deviation between the forecast and measured polls was 6.4 percent with 7.5 percent being the Root Mean Squared Deviation (RMSD = square root of the mean of the squares of the residuals or deviations between the calculated and measured values). The closeness of these two numbers means that there were not many points with much larger differences than others; all deviations were in the same range. In all cases, there was a rapid drop of favorable press coverage and elderly opinion from the consistently very high support in the 85 percent range between 1985 and the passage of the bill in June 1988 The minimum of 35 percent was reached from October 14 to October 17, 1989, between the time of the House repeal on October 4 and the Senate action on November 22. Press coverage and projected senior opinion then rebounded to 43 percent by the time of the Senate action with a continued increase to 48 percent by the end of the month.

The same general time trend was seen when calculations were made from the individual news sources (Fig. 4, bottom frame) in line with the general consonance in the American press. All calculated opinion followed the same general time trend of a significant drop beginning

shortly after the bill's passage with a minimum at about the time of repeal. Both before and after passage (Fig. 4, bottom frame, dotted line), all four news sources had approximately the same ratio of positive and negative paragraphs (Table 1). The calculated opinion trend based on all news sources combined was obviously in the midst of those calculated from the AP and the individual papers alone. All paragraphs were given the same weight regardless of news source for the time trend computations when the sources were combined.

As noted in the explanation of equation 1, the polled pro and con percentages were renormalized values after removal of the undecided responses. This was a reasonable approximation for the first three poll points (Fig. 4, top frame) where the percentages of undecided were 6, 9 and 3 percent, respectively. However, at the last three times, the undecideds were higher with values of 14, 28 and 21 percent, in that order. At these times, it might have been less appropriate to remove the undecideds and renormalize. Nevertheless the fit was not bad and the general decreases in both the estimated and measured opinion were evident. The normalization simplified the modeling because, otherwise, the model would have had to describe how people move into and out of the undecided group. Such modeling has been done before when it was found to be necessary (Fan, 1988).

To distinguish the various persuasive forces, the text was analyzed by computer for the sources cited. A reading of random articles showed that there were six important specified categories: politicians and political parties, lobbyists and lobby groups, average citizens, research findings, and sources specifically described as anonymous. Therefore, dictionaries and sets of rules were developed to identify paragraphs specifically referring to these sources. Pro and con scores from these paragraphs were used to construct persuasive force functions like those in Fig. 1.

Words used to identify political groups included names of politicians, "Democratic,"

"Republican," and "Congress." Not surprisingly, this group was the most numerous of the readily identifiable sources (Figs. 5 and 6). For these sources, there was sufficient coverage to obtain pro-con media time trends which showed the same shift from favorable to unfavorable news after passage of the bill (compare Figs. 5 and 6).

Lobby sources (Figs. 5 and 6) were indicated by lobby names such as AARP, the National Association of Retired Federal Employees (NARFE) and the National Committee to Preserve Social Security and Medicare. Also included were spokespersons names. Lobby sources were not often quoted for straightforward approval or disapproval (Table 1, Figs. 5 and 6, center frame).

Turning to the third of the major quoted sources, "citizens" was a loose category that was based on identifiers such as "elderly" and "senior citizen." This category had significant representation between the times of passage and repeal and was quoted more frequently in the pro-con context than lobbyists (Figs. 5 and 6).

The other sources were mentioned even less. Research referred to abstract categories associated with words such as "report," "study," and "survey." References to these sources were few, corroborating observations made by Straw (1990) and others on the extent to which facts were missing. The debate was fueled more by opinion than information. "Anonymous," a popular source for controversial topics, included "anonymous" and "unidentified." There were also few such attributions on this issue.

Given its large size, the political group of sources was further subdivided into Democrats and Republicans. Favorable and unfavorable discussion of catastrophic health insurance was scored for both subgroups (Fig. 7). These data show that it was the Republicans, with the Reagan administration being a prime player, who led the renewed push for catastrophic health legislation in early 1986. The Democrats, who had discussed the plan favorably in the 1970s

then followed in a supportive manner. Both parties consistently and overwhelmingly supported the measure up to the passage of the bill (Fig. 7, Table 1).

Afterwards, both political parties were associated with more and more negative press reports. Not all of these negative reports referred to politicians repudiating the bill. Some of the unfavorable computer scores included reports that politicians might have favored the bill but were afraid that the measure would be repealed or were under pressure to revoke it. This type of scoring recognized that such information would be interpreted by lawmakers, the public, and the polled population of senior citizens as being unfavorable to the legislation.

In the previous analyses, all stories were included regardless of whether they were on the editorial or news pages. To see if signed opinions were significantly different, a separate study was made of editorials, opinion pieces and letters to the editor. These items corresponded to 21 percent of the total newspaper articles. Since these items were likely to be devoted exclusively to catastrophic health and since their numbers were low, a separate retrieval was made in which the entire text was retrieved rather than just that within fifty words of the search phrase. Nevertheless, the story numbers were too small for establishing clear time trends (Figs. 8 and 9).

Scores aggregated into the two time periods before passage and before repeal (Table 1) give preliminary indications of the differences in sentiments of the various groups. Before passage, press reports from all groups showed favorable coverage. After passage and before repeal, the percentage of favorable paragraphs dropped for all news sources. As politicians were attacked on the issue, favorable coverage in the context of the two parties also dropped with the Democrats showing a lesser decline.

Besides examining the sources for the information on catastrophic health, the nature of the discussion was also explored. The most striking change was the shift in the rhetoric used

for discussing the financing. In the aggregated time period of two and one-half years before the bill's passage, payment was discussed more frequently in terms for premiums to be paid by beneficiaries (38.2 paragraphs) than taxation (32.5 paragraphs). However, after passage and before repeal, the tax and surtax language (177.8 paragraphs) overwhelmed the discussion of premiums (28.5 paragraphs). This shift in language is also confirmed in Fig. 10 showing the time course of the change in terminology. When the paragraphs on taxes and premiums were scored in terms of pro and con and not just discussion of the type of financing (Table 1, Figs. 11 and 12), the same shift is seen from premiums to taxes.

Among the major sources of information causing the shift were the mailings by the Conservative Caucus, led by former Nixon aide Howard Phillips, and the Taxpayer Education Lobby in addition to the dominant force, Roosevelt's National Committee (Hosenball, 1989). These direct mailings were successful in reframing the debate from benefits to taxes despite attacks in the press on the National Committee for unfair information and fraudulent fund-raising. Examples include: "The committee has been conspicuous in the past for conducting, over the signature of James Roosevelt, a deceptive fund-raising campaign..." (Los Angeles Times, 1988). "'It's a standard technique of the Roosevelt committee to raise money by scaring people and misrepresenting issues,' said Rep. Donald Pease (D., Ohio)" (Povich, 1989). "The group [National Committee] has been assailed by the program's supporters for publishing misinformation that frightened the elderly, and it acknowledged that its shorthand broadsides sometimes did violence to the facts" (Tolchin, 1989).

In addition to scoring for financing, the discussion of repeal was also analyzed. Obviously, there was no discussion of this possibility before passage of the bill mid-1988. The repeal language started to appear in early 1989 and rose to its maximum in the second half of the year. At all times, however, there was substantial sentiment against repeal (Fig. 11, bottom

frame) since the average fraction of paragraphs mentioning repeal but not favoring it was 25 percent of the total (Table 1). Even the most vociferous opponent did not demand complete repeal:

> Ken Hoagland, of the National Committee to Preserve Social Security and Medicare, says that his group won't back repeal of the act. But it will consider a range of options, from making catastrophic-health coverage optional to adding nursing home care to the law at no extra charge to the elderly (Quinn, 1989).

Conclusion

The first link drawn in this paper is between the press and opinion. Our methodology was to score newswire and newspaper stories by computer and then to use the scores in the mathematical model of ideodynamics to calculate an expected opinion time trend. Since the persuasibility constant was the only parameter in the ideodynamic model, the shape of the calculated opinion time trend was entirely set by the press scores. With the direction set, the only question was the amount of opinion shift for a given amount of press information (equation 1).

As found previously, this indirect estimate of opinion matched that determined in actual surveys showing that the press embodied the key influences acting on the populace (Fig. 4). The only change in this study was to use poll data for senior citizens and not the public at large. Unfortunately, poll time trends were not available for any other population (Ferree and Milavsky, 1989). A search of the comprehensive POLL database at the Roper Center at the University of Connecticut for the word combination "catas# health" (the # indicated that any trailing letters were permitted) identified 21 different questions between 1977 and October 1989. In most of these, catastrophic health was mentioned in the contexts of national health insurance and health care costs. The only straightforward question of support or opposition for a

catastrophic health program was asked in 1986, with 89 percent for and 9 percent against. The very high public approval at that time is close to the value measured for senior citizens and forecast in Fig. 4. Our finding of a tight relationship between the press and attitudes has also been found by others including Page, Shapiro and Dempsey (1987) and Iyengar and Kinder (1987).

On the topic of lawmaking, Page and Shapiro (1983) have proposed that opinion prepares the groundwork for legislation with 22 of 46 their cases showing an opinion shift before a policy change in the same direction. For catastrophic health, the bill was passed when there was strong support in both measured opinion and that calculated from the press. Since our highly favorable, calculated opinion (Fig. 4) was maintained for three and a half years before passage and since there was broad support by both the general public in 1986 and the elderly population just before passage of the bill in 1988, there were no temporal shifts which could be used see if opinion moved before legislation.

After passage, favorable press coverage and opinion reached a minimum when repeal occurred. Therefore, a lag between opinion shift and repeal could have occurred if the threshold in opinion change needed for repeal was less than the value at the minimum in the opinion curve. It is also possible that there was little lag in line with Linsky's (1986) suggestion that extensive media coverage is a spotlight which accelerates decision making. Yet another potential cause for the speed of repeal might have been the compression in the time scale for the debate due to the imminent start of payments by the elderly at the beginning of 1990. Without time to craft a satisfactory compromise,both houses of Congress could have opted for outright repeal at the end of 1989 rather than keep an unpopular tax. In the absence of such a deadline, it is conceivable that Congress could have agreed on a changed bill after additional deliberation. In this case, there would have been Page and Shapiro's expected delay between a shift in opinion

and new legislation. In other words, their lag might sometimes be due to the time needed to craft a politically palatable solution after public interest was clear.

A delay arising from the time needed for a compromise would be also consistent with Colby and Cook's (1991) finding that introductions of bills on the disease of AIDS was approximately contemporaneous with press interest which should, in turn, have been concurrent with opinion shifts as we have found for both catastrophic health and other examples (Fan, 1988; Fan and McAvoy, 1989; Fan and Tims, 1989). Introductions would not require the lengthy negotiations needed to pass a bill.

Simultaneously with the press affecting the public, the public can also can have an impact on media content. For almost all issues, for instance, there will be qualitative assessments of public sentiment by reporters and others quoted in the press. In addition, published surveys constitute a direct means for the public to influence the media. Since there were essentially no published polls on catastrophic health, this measure of opinion was not widely available to the media and had little impact on press coverage. For instance, the polls in Fig. 4 were not released until after repeal of the bill. For other topics like a Presidential election, the opposite is true with press stories filled with opinion poll data.

During the entire debate, reports of pro and con positions directly associated with lobby groups (11.9 paragraphs total) were only 1.8 percent of that attributed to politicians, both Republicans and Democrats (660 paragraphs total). For interest groups relying on mass mailings, that was understandable. In addition, many politicians might simply have retransmitted lobbyist positions. The press could have given an accurate -- albeit indirect -- portrayal of lobby influence simply by reporting politicians' repetitions of their views.

The high visibility of members of Congress show that, unlike the public which depends on others including pollsters to capture its views for the media, lawmakers have progressively

recognized the importance of communicating with the press to promote their own agendas (Cook, 1989). Cook (1989), for instance, has found a decrease from 366 in 1970 to 112 in 1986 for House offices without a listed press person.

Although there are also pressures from such sources as constituents, interest groups, and fellow lawmakers (Clausen, 1973; Kingdon, 1981; Matthews and Stimson, 1975), no member of Congress can have as extensive a network of information gatherers as the media. Therefore, media messages serve as indispensable complements to those from non-mediated routes. As Entman (1989) has noted, "Elites know that they can only act on their perceptions of the public wants, and that the media are primary sources for information on public sentiments." Obviously, the importance of the press will be much greater for issues like catastrophic health which was prominently in the news. For the many bills passed with less fanfare, the press would be less important.

Our most extensive analysis for catastrophic health was of the media itself and showed a number of noteworthy features. For instance, Our finding of similar paragraph profiles and opinion predictions for four different news organizations are consistent with the written press moving in "packs" (e.g. Paletz and Entman, 1981) of "jackals" (e.g. Altschull, 1977).

Of all the media shifts before and after the bill's passage, the most pronounced was the change in financing language from insurance type premiums to taxation. This rhetorical device was that used by Roosevelt's National Committee to Preserve Social Security and Medicare in its mailings so our content analysis of the mass media could capture the success of that committee at framing this issue through its mass mailings. Our findings give quantitative support to Straw's (1990) more qualitative conclusions that media information changed from "relatively positive" to "largely negative, focusing on the rising protests and the potential costs of coverage" after passage of the bill. These changes in coverage had exaggerated effects on

opinion, Straw suggests, because the public's actual knowledge of the issue was low and thus "opinion was fluid." In the ideodynamic equation, this fluidity means a large k'_2 value. As opinion is more firmly fixed and impervious to change, the k'2 value decreases meaning that a larger amount of persuasive information is needed to effect the same opinion shift.

So far as time trends in media coverage were concerned, the support for the bill was bipartisan with the Republican President having pushed it hardest after 1986. Among the identified sources (Table 1), the Democrats showed less erosion in support than Republicans after passage of the bill. The Democrats may have been relatively more supportive because of their reliance on less wealthy constituents who would have paid less additional revenues to finance the act.

Among the subgroups studied, editorials showed one of the smaller drops in support for the bill after passage, consistent with their being written by people who were less pressured by interest groups and constituents. On the other hand, to give a fuller flavor of the debate, the newspapers could have preferentially printed more opposing ideas in the form of opinion pieces which would explain the low relative support for the bill in op-ed articles after the bill's passage (Table 1).

Our media analysis included hard news along with the editorials and opinion pieces which only accounted for about 21 percent of the total news stories. The news portion could clearly serve as a conduit through which all segments of society could transmit their views and actions. Real world cues like spontaneous citizen demonstrations were also so conveyed. In addition, the press could also serve as a meter for measuring the effects of information in other message channels. For catastrophic health, the press was an accurate gauge for assessing the ability of the mailings of Roosevelt's Committee to galvanize the wealthy elderly to protest to their legislators even though the mailings themselves passed through another pipeline.

Public reliance on media information is so complete that time trends of opinion polls can be forecast using just this input. For legislation, the data are too fragmentary from just the catastrophic health example. Future studies with other examples will be needed to show the extent to which the press is also able to convey and gauge the major influences acting on lawmakers.

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Figure Legends

Fig. 1. AP paragraphs favorable and unfavorable to catastrophic health insurance. The paragraph scores are obtained by computer content analysis of all AP news stories between January 1, 1977 and December 1, 1989. The paragraph scores are obtained by computer content analysis of news stories. The plot for each paragraph is at its highest point on the date it appeared and then drops exponentially with a one-day half-life (Fan, 1988).

Fig. 2. Paragraphs favorable to catastrophic health insurance in different news sources. The sources are, in order from the top frame: all sources combined, Associated Press, Los Angeles Times, New York Times, and Washington Post.

Fig. 3. Paragraphs unfavorable to catastrophic health insurance from different news sources. Same sources as Fig. 2.

Fig. 4. Ideodynamic computation of opinion favorable to catastrophic health insurance compared to poll values. Both frames: Squares represent polled opinion for persons over 65 years of age (from Straw, 1990). Line top frame: Time trends of favorable opinion computed from all scores combined. Lines bottom frame: Dotted line is replot of top frame; four solid lines are time trends of favorable opinion computed from the AP, Los Angeles Times, New York Times, and Washington Post separately.

Fig. 5. Paragraphs favorable to catastrophic health insurance associated with different quoted sources. The quoted sources are, in order from top frame: politicians and political groups; lobbyists and lobby groups; and average citizens.

Fig. 6. Paragraphs unfavorable to catastrophic health insurance associated with different quoted sources. Same sources as Fig. 5.

Fig. 7. Paragraphs favorable and unfavorable to catastrophic health insurance associated with Democrats and Republicans.

Fig. 8. Paragraphs favorable to catastrophic health insurance associated with directly printed opinions. The quoted opinion sources in order from top frame are: letters to the editor, signed opinion pieces on op-ed pages, and editorials.

Fig. 9. Paragraphs unfavorable to catastrophic health insurance associated with directly printed opinions. Same sources as in Fig. 8.

Fig. 10. Paragraphs on methods of financing catastrophic health insurance.

Fig. 11. Paragraphs favorable to catastrophic health insurance associated with tax financing, insurance premium financing, and repeal of the law (order from top frame).

Fig. 12. Paragraphs unfavorable to catastrophic health insurance associated with tax financing, insurance premium financing, and repeal of the law (order from top frame).

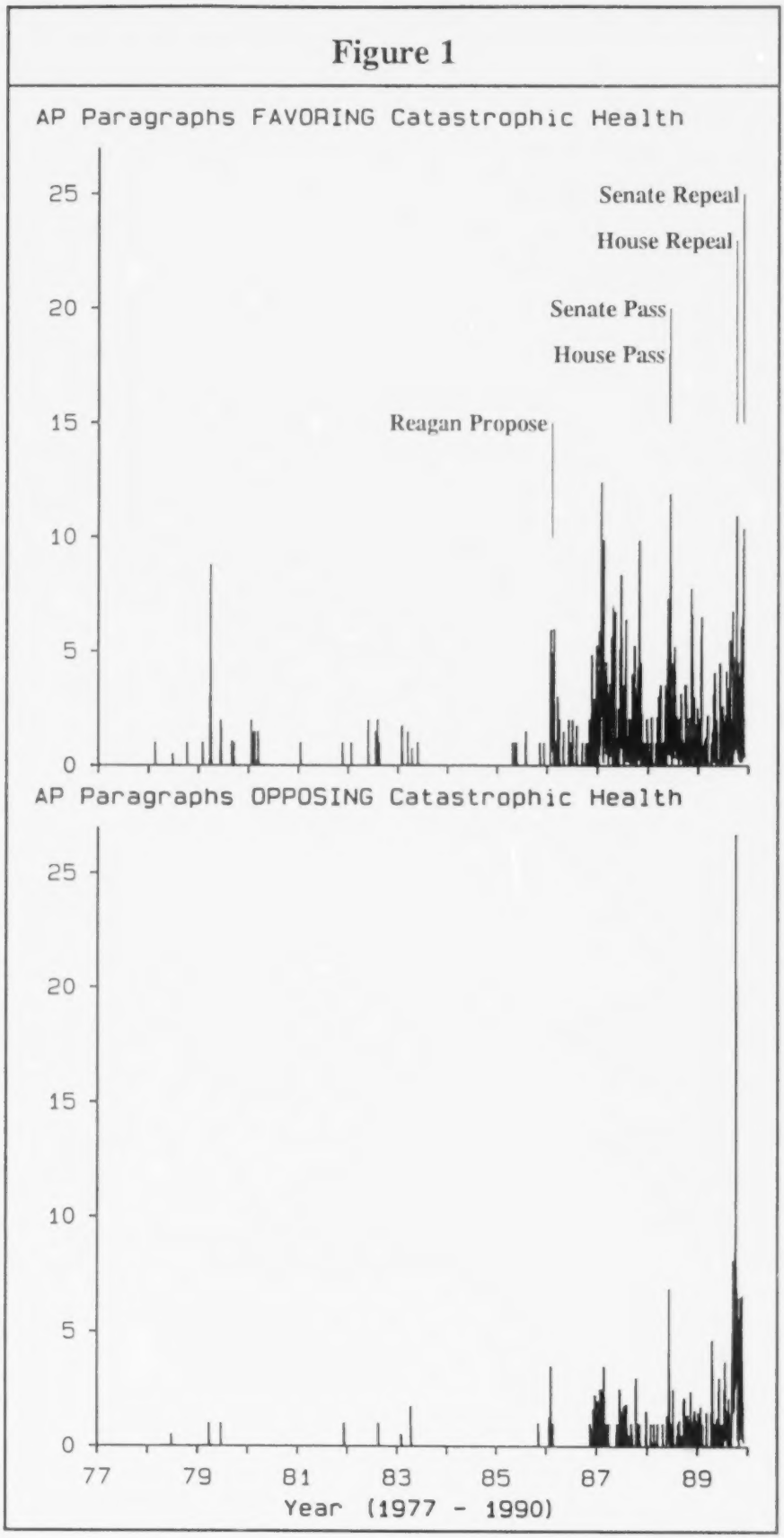
Table Legends

Table 1. Summary of computer content scores before passage and before repeal of the Medicare Catastrophic Coverage Act. In the table, Para Pro and Para Con refer, respectively, to the numbers of paragraphs favorable and unfavorable to the bill while % Pro refers to the percentage of favorable paragraphs to the sum of those both favorable and unfavorable. Note that every paragraph has a score 1.0 with paragraphs both pro and con getting fractional scores favoring both positions. Therefore, the actual number of paragraphs mentioning either category is greater than the paragraph scores in the table.

Table 1: Summary of computer content scores before passage and before repeal of the Medicare Catastrophic Coverage Act.

News source	Before Passage (1/1/86-6/7/88)			Passage to Repeal (6/8/88-11/21/89)			Both Time Periods (1/1/86-11/21/89)		
	Para Pro	Para Con	% Pro	Para Pro	Para Con	% Pro	Para Pro	Para Con	% Pro
AP + 3 Newspapers	435.5	68.5	86	327.2	236.8	58	762.7	305.3	71
AP	194.0	39.0	83	133.5	98.5	58	327.5	137.5	70
Los Angeles Times	59.0	7.0	89	43.0	41.0	51	102.0	48.0	68
New York Times	50.8	9.2	85	45.2	32.8	58	96.0	42.0	70
Washington Post	131.7	13.3	91	105.5	64.5	62	237.2	77.8	75
Letters to Editor	9.0	4.0	69	30.0	21.0	59	39.0	25.0	61
Opinion Pieces	34.2	6.8	84	12.5	13.5	50	46.7	20.3	70
Editorials	45.5	12.5	78	64.2	29.8	68	109.7	42.3	72
Democrats	88.7	21.1	81	83.4	40.4	67	172.1	61.5	74
Republicans	226.5	44.5	84	89.6	56.0	62	316.1	110.5	76
Lobbyists	3.0	1.0	75	4.9	3.0	63	7.9	4.0	67
Citizens	12.9	4.0	77	20.1	9.7	67	32.9	13.6	71
Premium Financing	26.4	3.3	89	10.9	7.9	58	37.3	11.2	77
Tax Financing	19.8	2.0	87	63.9	59.8	52	83.7	61.8	58
Repeal of Bill	0.0	0.0		40.7	123.9	25	40.7	123.9	25

Figure 1


AP Paragraphs FAVORING Catastrophic Health
25
20
15
10
5
0
Senate Repeal
House Repeal
Senate Pass
House Pass
Reagan Propose
AP Paragraphs OPPOSING Catastrophic Health
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15
10
5
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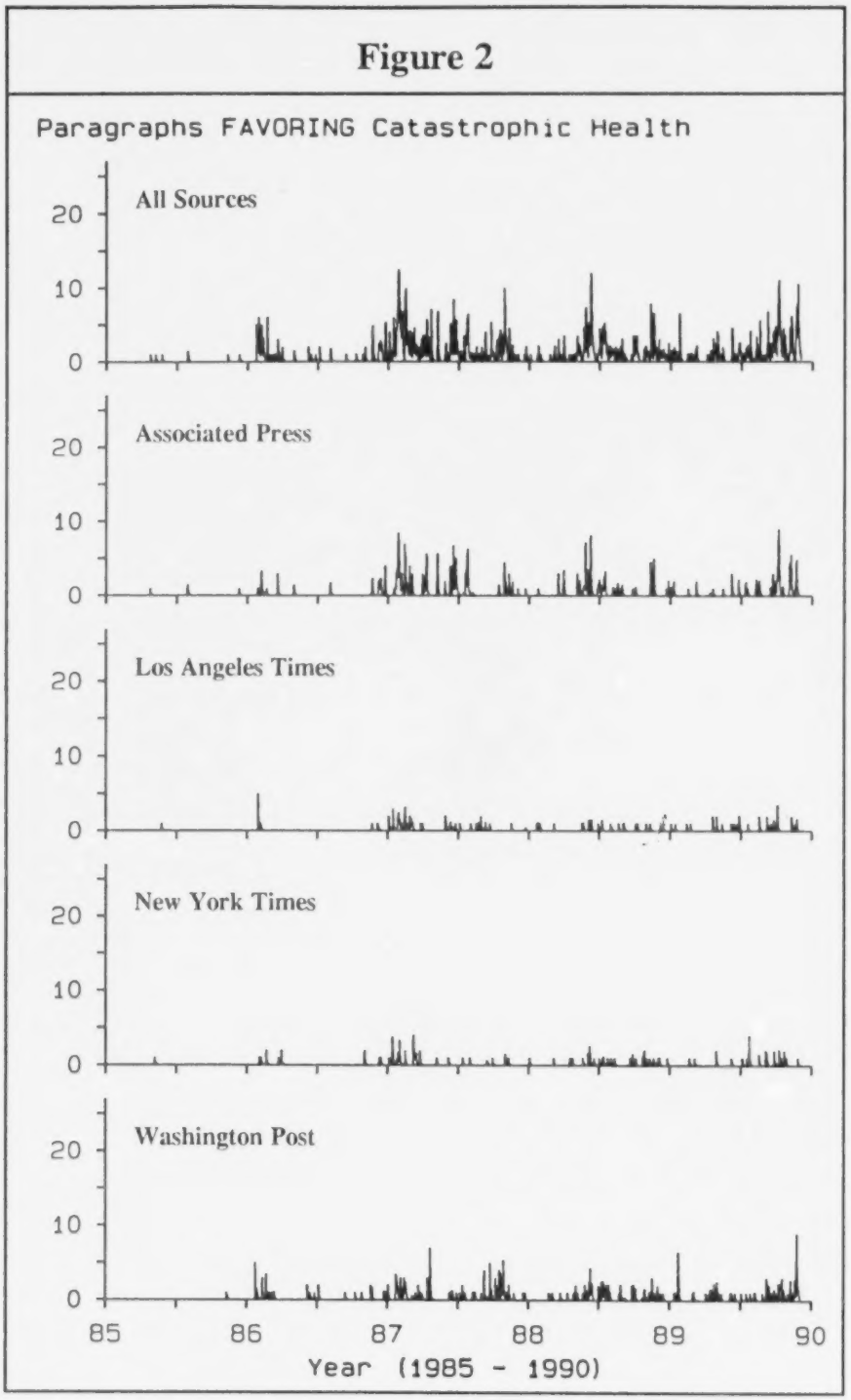
77
79
81
83
85
87
89
Year (1977 - 1990)

Figure 2


Paragraphs FAVORING Catastrophic Health
All Sources
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Los Angeles Times
New York Times
Washington Post
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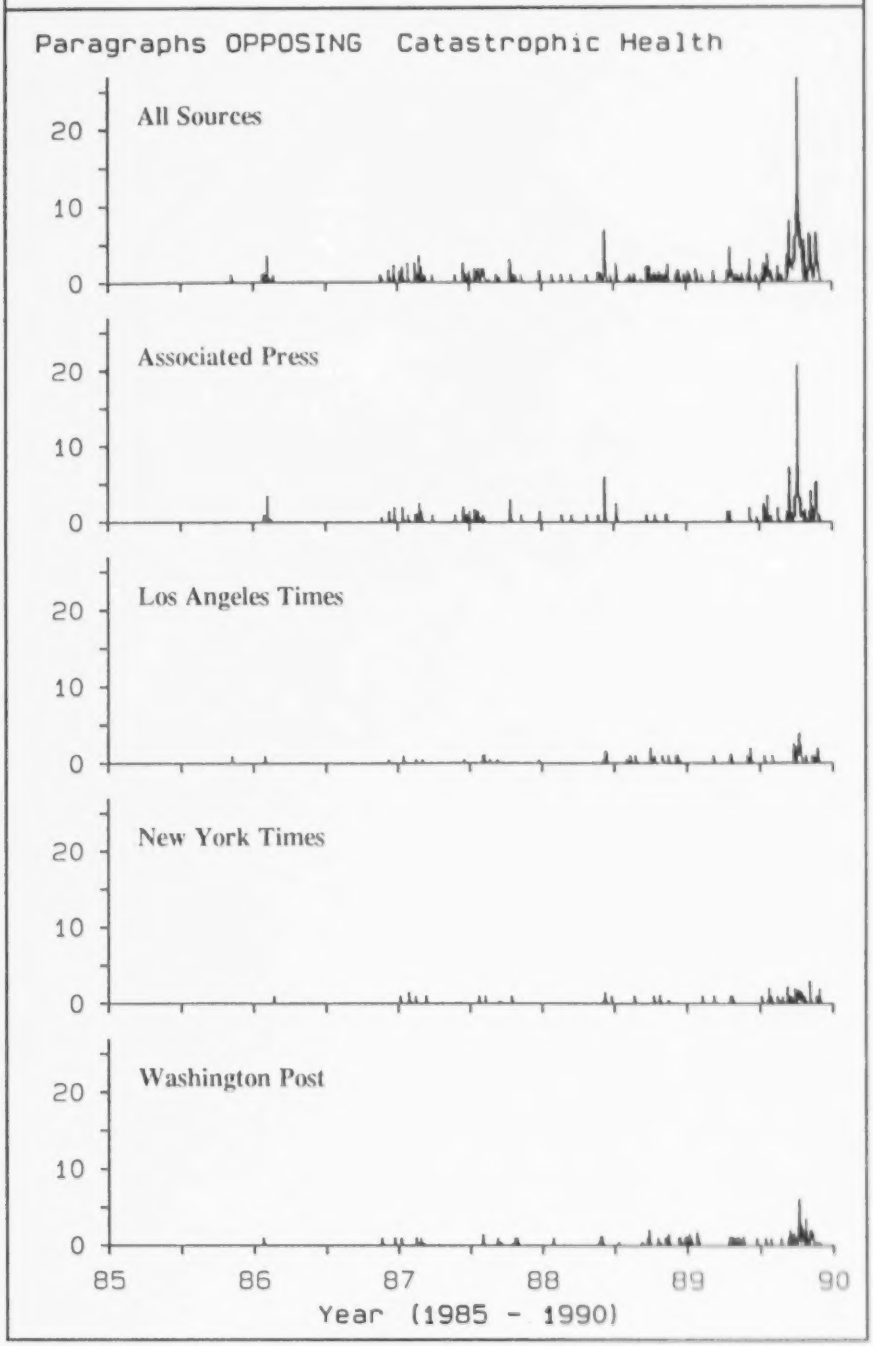
10
0
85
86
87
88
89
90
Year (1985 - 1990)

Figure 3


Paragraphs OPPOSING Catastrophic Health
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Los Angeles Times
New York Times
Washington Post
20
10
0
85
86
87
88
89
90
Year (1985 - 1990)

Figure 4

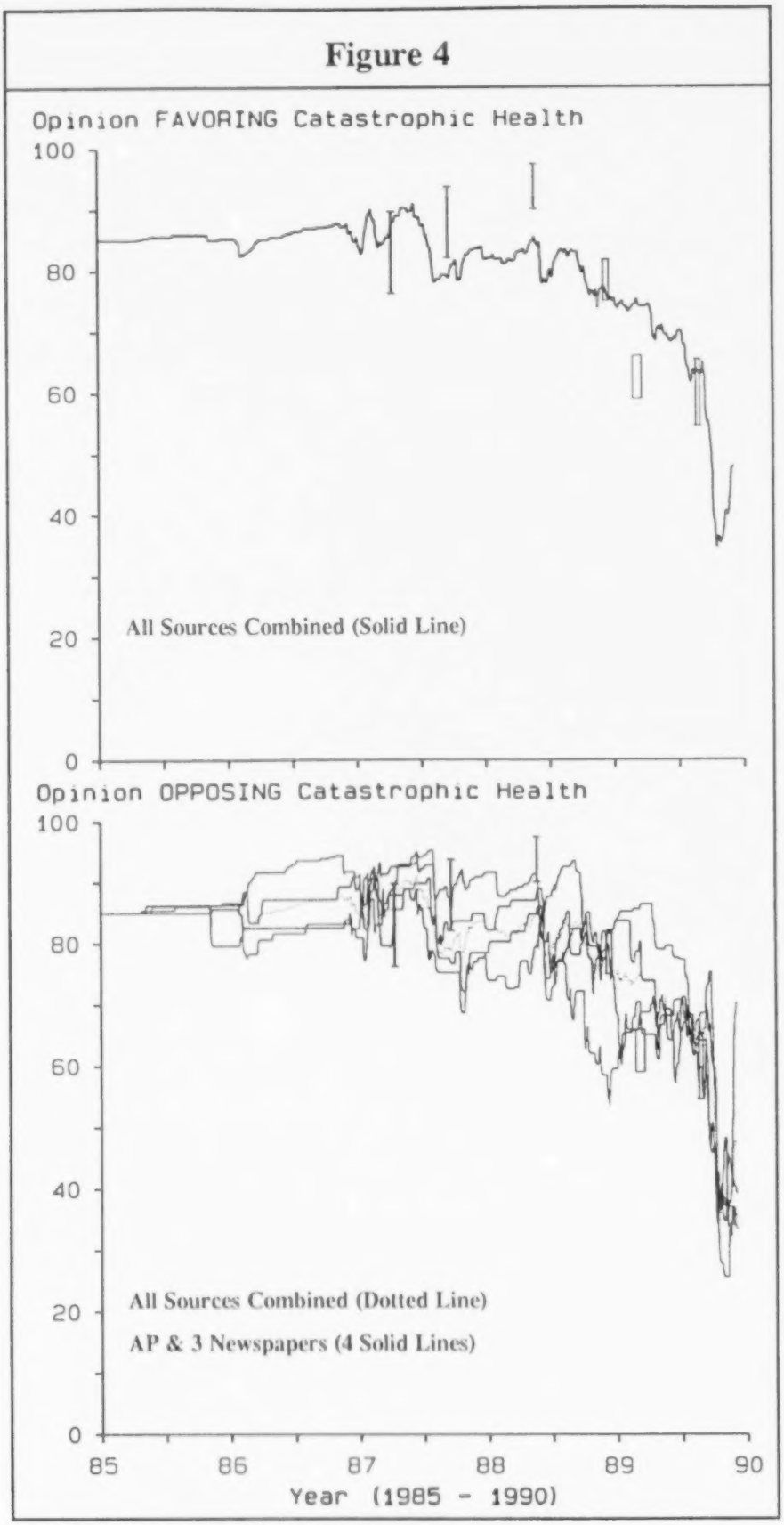

Opinion FAVORING Catastrophic Health
100
80
60
40
20
0
All Sources Combined (Solid Line)
Opinion OPPOSING Catastrophic Health
100
80
60
40
20
0
All Sources Combined (Dotted Line)
AP & 3 Newspapers (4 Solid Lines)
85
86
87
88
89
90
Year (1985 - 1990)

Figure 5

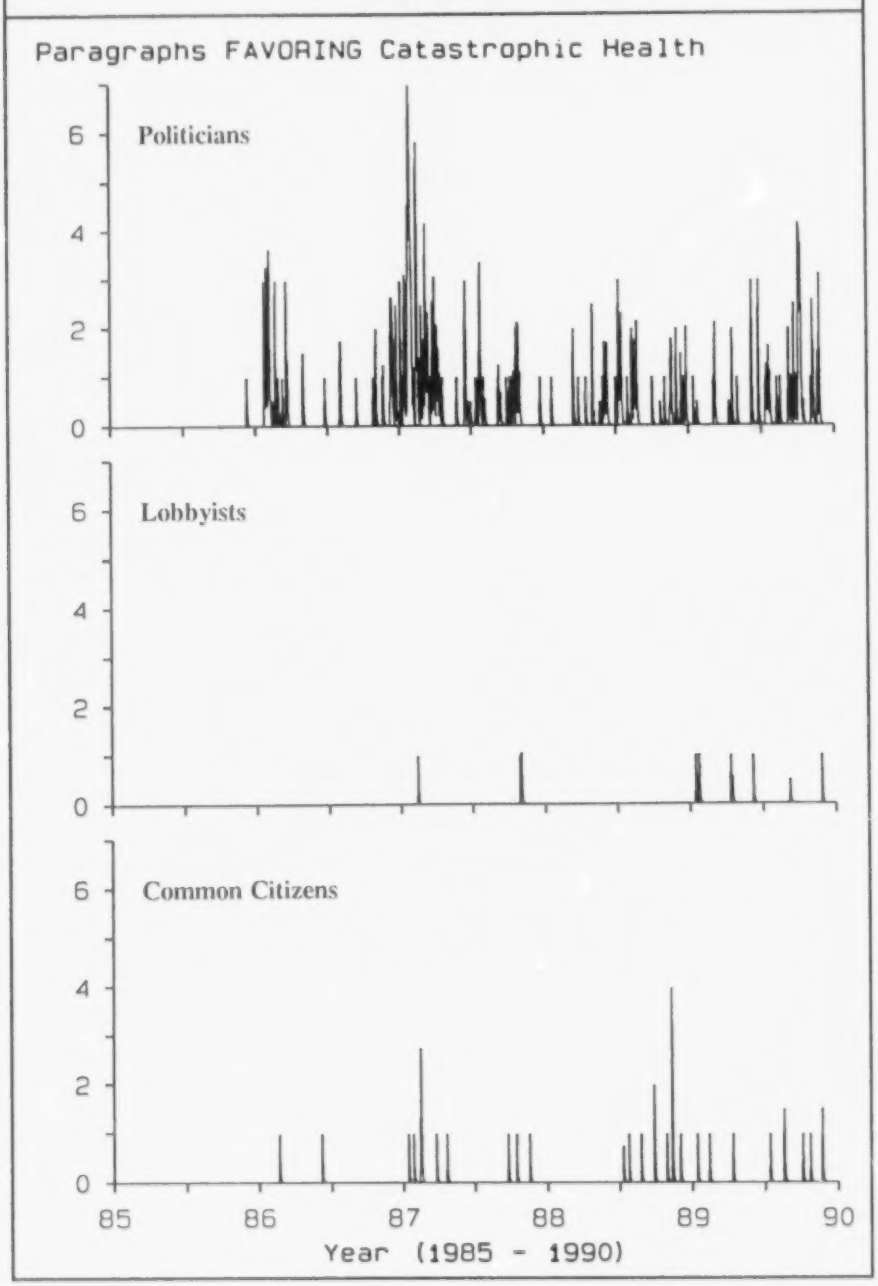
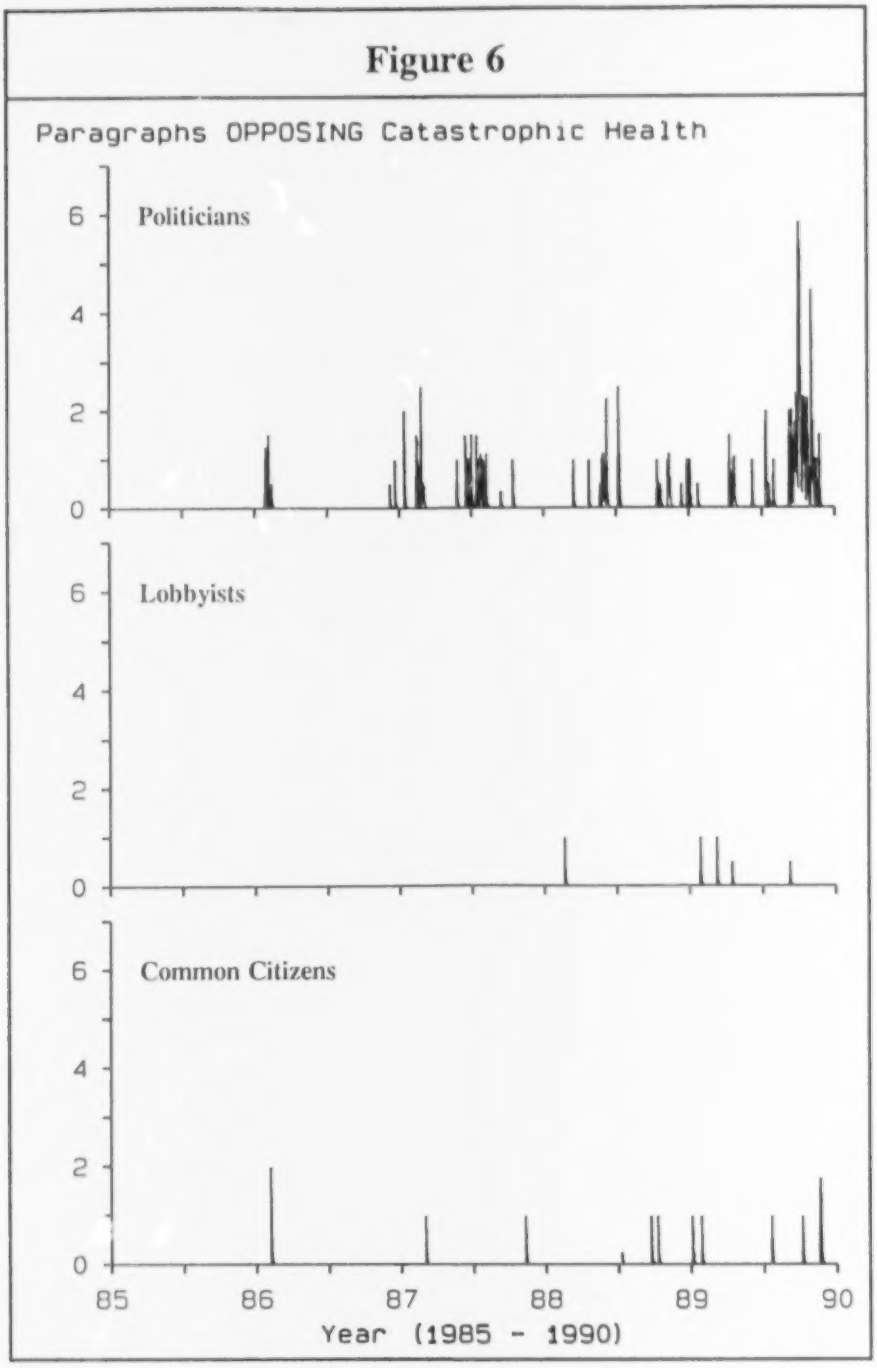

Paragraphs FAVORING Catastrophic Health
Politicians
Lobbyists
Common Citizens
0
2
4
6
85
86
87
88
89
90
Year (1985 - 1990)

Figure 6


Paragraphs OPPOSING Catastrophic Health
Politicians
Lobbyists
Common Citizens
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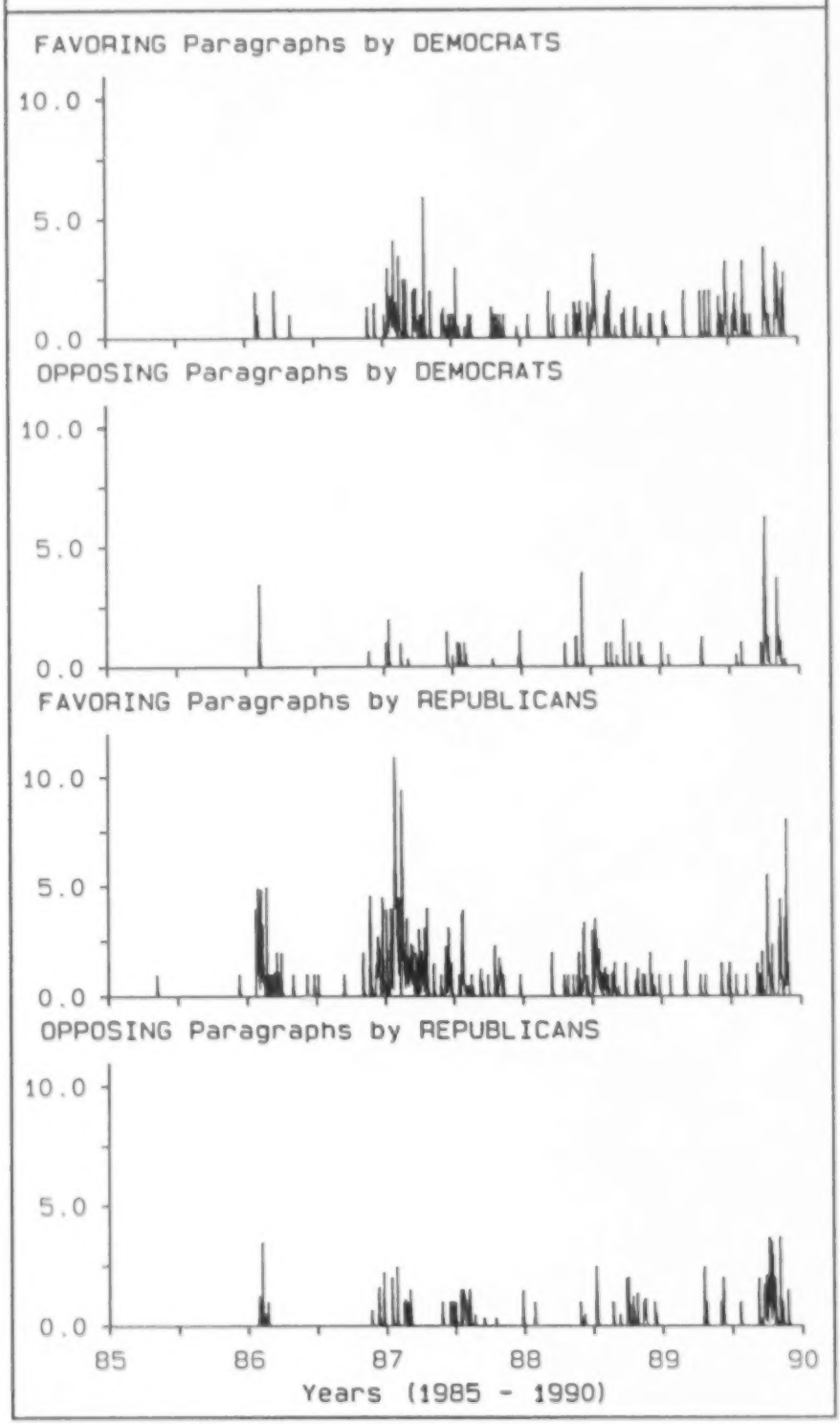
4
6
85
86
87
88
89
90
Year (1985 - 1990)

Figure 7


FAVORING Paragraphs by DEMOCRATS
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OPPOSING Paragraphs by DEMOCRATS
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5.0
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FAVORING Paragraphs by REPUBLICANS
10.0
5.0
0.0
OPPOSING Paragraphs by REPUBLICANS
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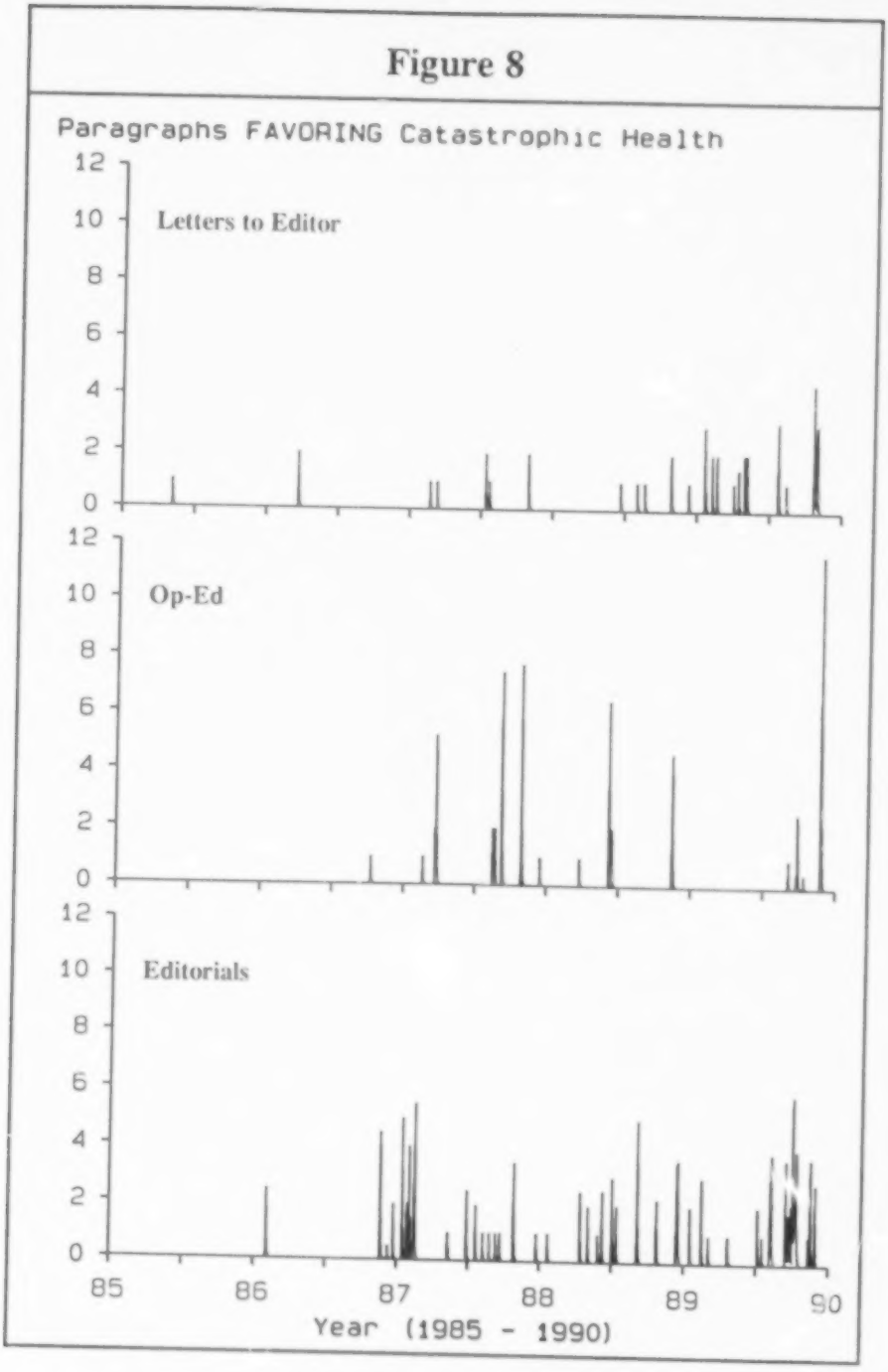
5.0
0.0
85
86
87
88
89
90
Years (1985 - 1990)

Figure 8


Paragraphs FAVORING Catastrophic Health
Letters to Editor
Op-Ed
Editorials
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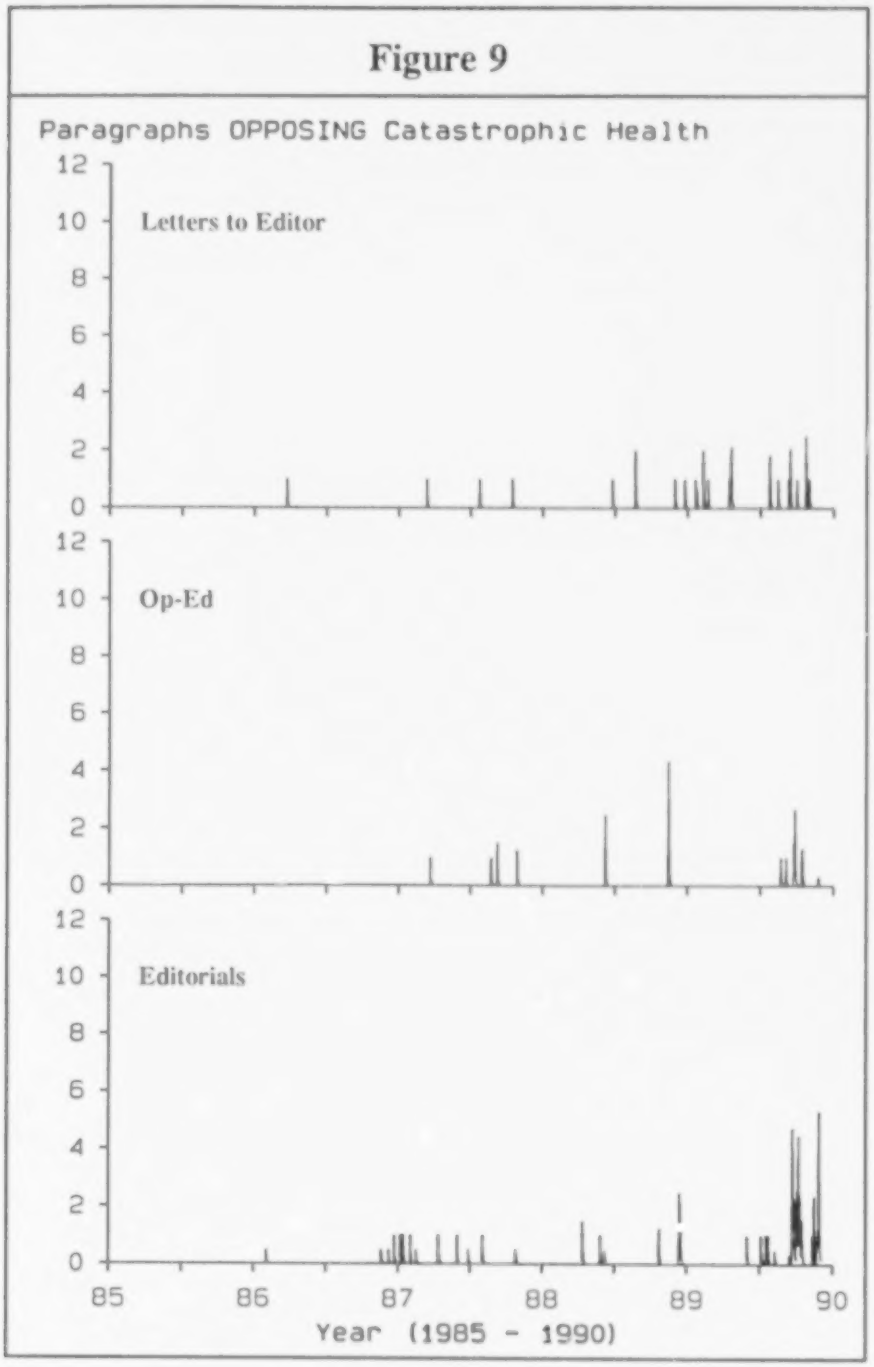
2
4
6
8
10
12
85
86
87
88
89
90
Year (1985 - 1990)

Figure 9


Paragraphs OPPOSING Catastrophic Health
Letters to Editor
Op-Ed
Editorials
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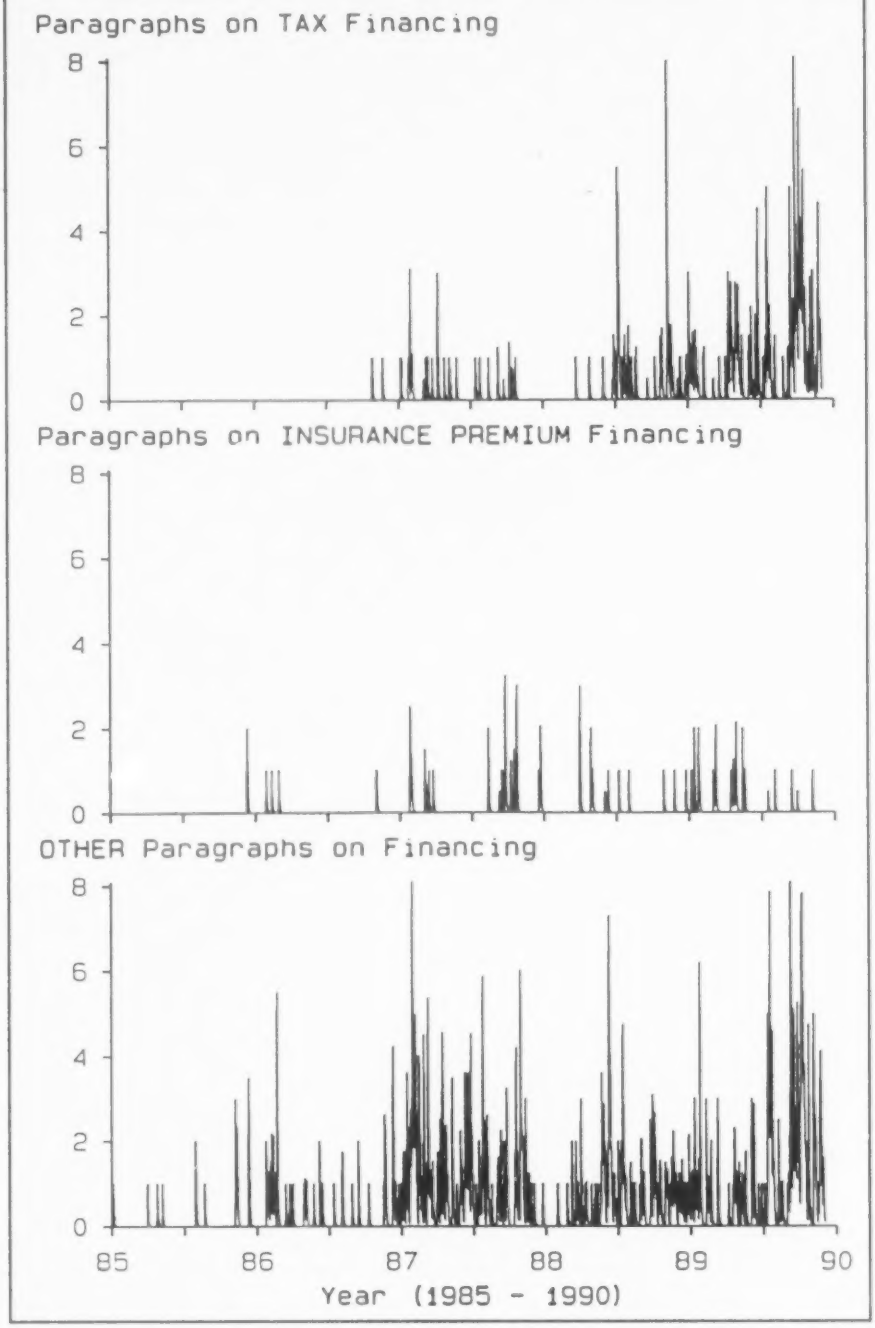
10
8
6
4
2
0
85
86
87
88
89
90
Year (1985 - 1990)

Figure 10


Paragraphs on TAX Financing
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4
2
0
Paragraphs on INSURANCE PREMIUM Financing
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OTHER Paragraphs on Financing
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4
2
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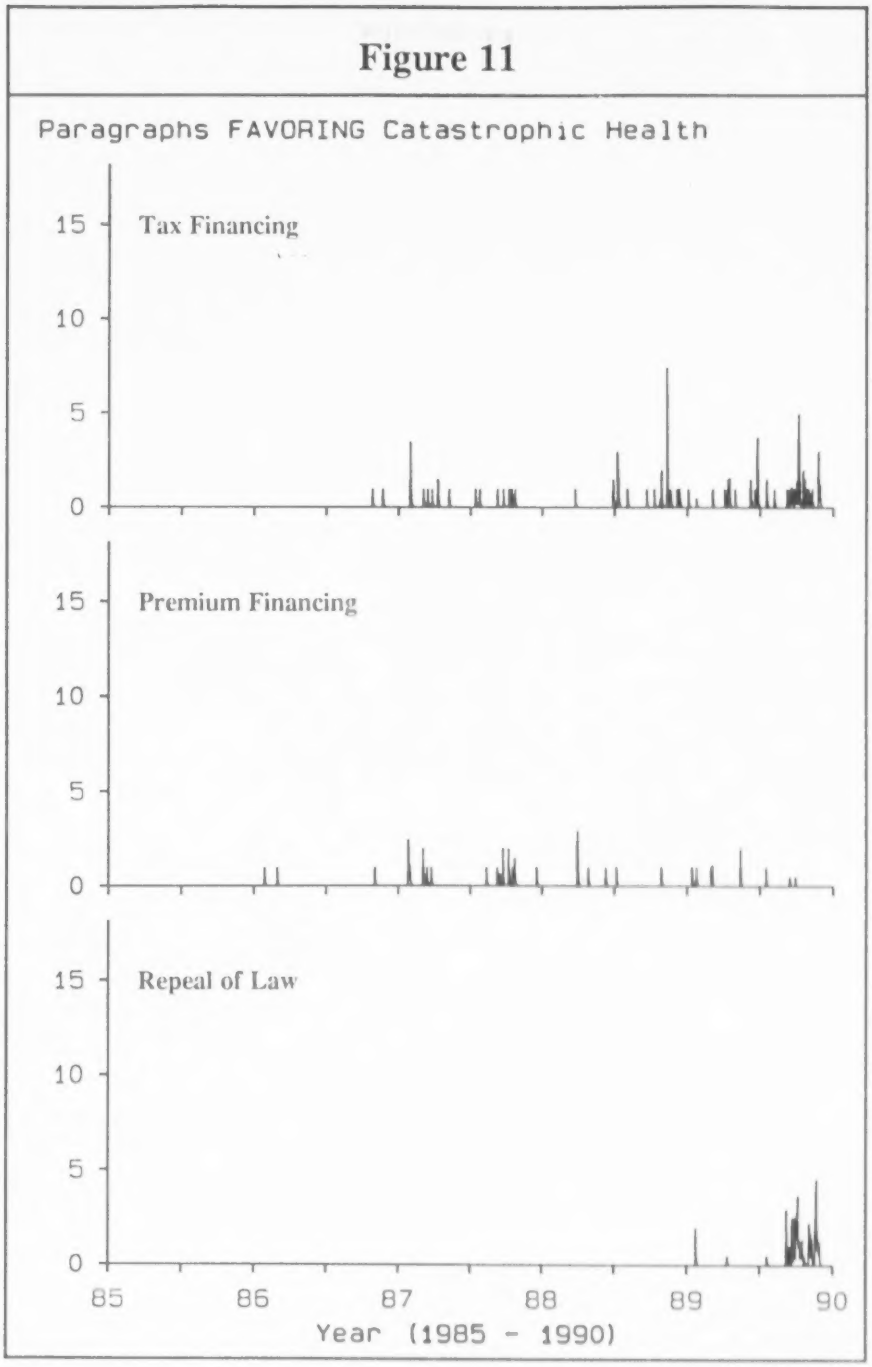
86
87
88
89
90
Year (1985 - 1990)

Figure 11


Paragraphs FAVORING Catastrophic Health
Tax Financing
Premium Financing
Repeal of Law
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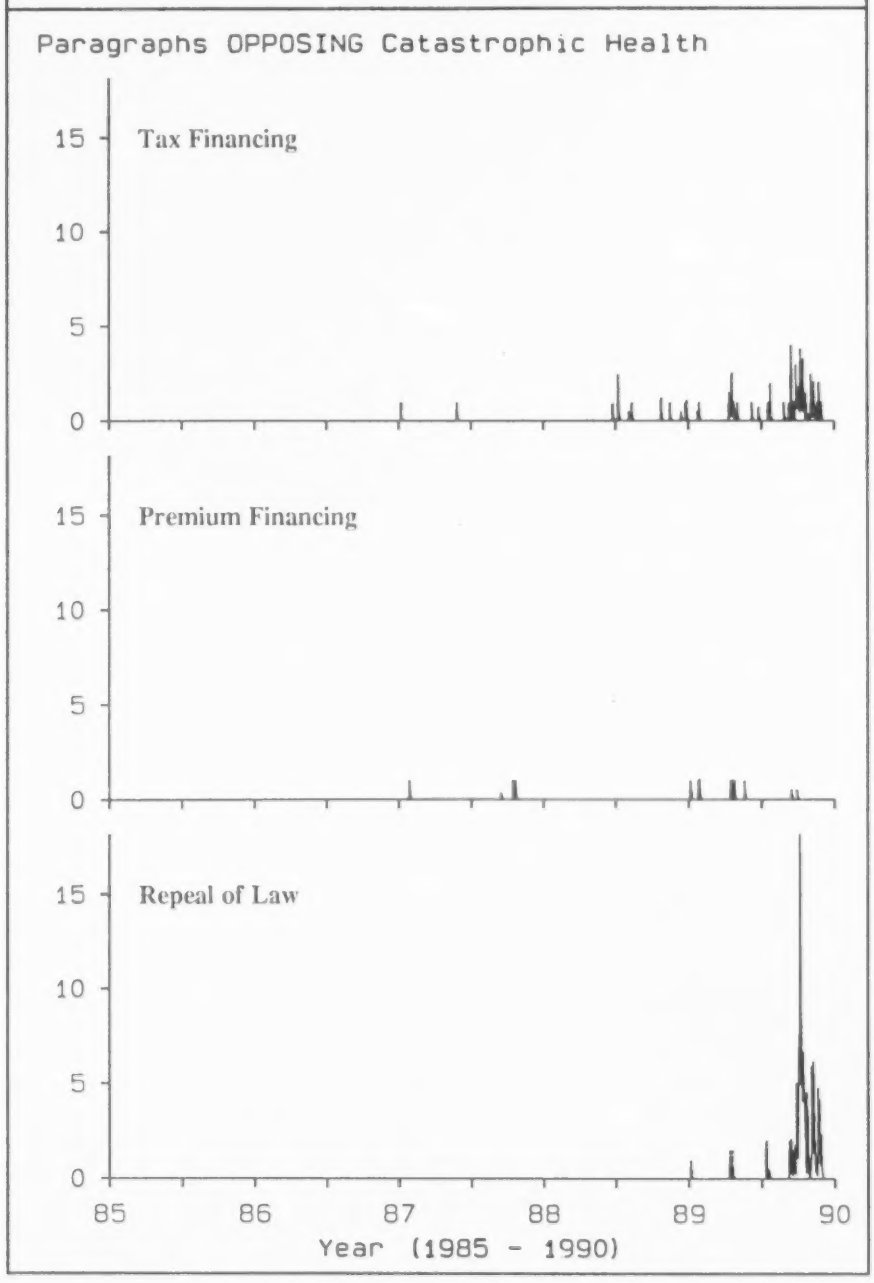
10
5
0
85
86
87
88
89
90
Year (1985 - 1990)

Figure 12


Paragraphs OPPOSING Catastrophic Health
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Repeal of Law
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85
86
87
88
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90
Year (1985 - 1990)